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1. arXiv:2207.02472 [pdf, other] cond-mat.mes-hall

   ### InAs-Al Hybrid Devices Passing the Topological Gap Protocol

   Authors: Morteza Aghaee, Arun Akkala, Zulfi Alam, Rizwan Ali, Alejandro Alcaraz Ramirez, Mariusz Andrzejczuk, Andrey E Antipov, Pavel Aseev, Mikhail Astafev, Bela Bauer, Jonathan Becker, Srini Boddapati, Frenk Boekhout, Jouri Bommer, Esben Bork Hansen, Tom Bosma, Leo Bourdet, Samuel Boutin, Philippe Caroff, Lucas Casparis, Maja Cassidy, Anna Wulf Christensen, Noah Clay, William S Cole, Fabiano Corsetti , et al. (102 additional authors not shown)

   Abstract: We present measurements and simulations of semiconductor-superconductor heterostructure devices that are consistent with the observation of topological superconductivity and Majorana zero modes. The devices are fabricated from high-mobility two-dimensional electron gases in which quasi-one-dimensional wires are defined by electrostatic gates. These devices enable measurements of local and non-loca… ▽ More

   Submitted 16 November, 2022; **v1** submitted 6 July, 2022; **originally announced** July 2022.

   Comments: Added: a second device design; data from an additional device with larger topological gap; further testing of the **TGP** via simulations; links to a repo containing the raw data and analysis scripts necessary to reproduce all figures containing experimental or simulated data

2. arXiv:2205.15008 [pdf, other] cs.LG stat.ML

   ### Efficient Transformed Gaussian Processes for Non-Stationary Dependent Multi-class Classification

   Authors: Juan Maroñas, Daniel Hernández-Lobato

   Abstract: …for multi-class problems with a very large number of classes, which are the problems studied in this work. ETGPs exploit the recently proposed Transformed Gaussian Process (**TGP**), a stochastic process specified by transforming a Gaussian Process using an invertible transformation. However, unlike **TGPs**, ETGPs are constru… ▽ More

   Submitted 30 May, 2022; **originally announced** May 2022.

   Comments: Preprint

3. arXiv:2201.04226 [pdf, other] cs.SI

   ### Understanding how people consume low quality and extreme news using web traffic data

Authors: Zhouhan Chen, Haohan Chen, Juliana Freire, Jonathan Nagler, Joshua A. Tucker

Abstract: …sites, what brings people to those sites, where visitors come from, and what content they prefer to consume. In this paper, we analyze web traffic data from The Gateway Pundit (**TGP**), a popular far-right website that is known for repeatedly sharing false information that has made its web traffic available to the general public. We collect data on 68 million w… ▽ More

Submitted 11 January, 2022; **originally announced** January 2022.

4. **arXiv:2111.14790** [pdf, ps, other] cs.NE cs.AI

Solving classification problems using Traceless Genetic Programming

Authors: Mihai Oltean

Abstract: Traceless Genetic Programming (**TGP**) is a new Genetic Programming (GP) that may be used for solving difficult real-world problems. The main difference between… ▽ More

Submitted 7 October, 2021; **originally announced** November 2021.

Comments: arXiv admin note: substantial text overlap with arXiv:2110.02014, arXiv:2110.13608, arXiv:2110.00468

Journal ref: World Computer Congress, The Symposium on Professional Practice in AI, 26-29 August, Toulouse, France, edited by E. Mercier-Laurent, J. Debenham, pp. 403-412, 2004

5. **arXiv:2110.13608** [pdf, other] cs.NE cs.AI doi 10.1080/09528130601138273

Using Traceless Genetic Programming for Solving Multiobjective Optimization Problems

Authors: Mihai Oltean, Crina Grosan

Abstract: Traceless Genetic Programming (**TGP**) is a Genetic Programming (GP) variant that is used in cases where the focus is rather the output of the program than the program itself. The main difference between… ▽ More

Submitted 7 October, 2021; **originally announced** October 2021.

Comments: 9 figures. arXiv admin note: text overlap with arXiv:2110.02014

Journal ref: Journal of Experimental and Theoretical Artificial Intelligence, Taylor & Francis, Vol. 19, pp. 227-248, 2007

6. **arXiv:2110.02014** [pdf, other] cs.NE cs.AI doi 10.1109/CEC.2004.1331116

Solving even-parity problems using traceless genetic programming

Authors: Mihai Oltean

Abstract: A genetic programming (GP) variant called traceless genetic programming (**TGP**) is proposed in this paper…. ▽ More

Submitted 4 October, 2021; **originally announced** October 2021.

Comments: 7 Figures, 3 Tables

Journal ref: Congress on Evolutionary Computation, IEEE Press, Vol.2, pp. 1813-1819, 2004

7. **arXiv:2103.11893** [pdf, ps, other] eess.SP cs.IT math.PR

Thresholding Greedy Pursuit for Sparse Recovery Problems

Authors: Hai Le, Alexei Novikov

Abstract: We study here sparse recovery problems in the presence of additive noise. We analyze a thresholding version of the CoSaMP algorithm, named Thresholding Greedy Pursuit (**TGP**). We demonstrate that an appropriate choice of thresholding parameter, even without the knowledge of sparsity level of the signal and strength of the noise, can result in exact recovery wi… ▽ More

Submitted 17 March, 2021; **originally announced** March 2021.

Comments: First version

8. **arXiv:2011.09335** [pdf, other] cs.LG cs.RO

A Tunnel Gaussian Process Model for Learning Interpretable Flight's Landing Parameters

Authors: Sim Kuan Goh, Narendra Pratap Singh, Zhi Jun Lim, Sameer Alam

Abstract: …approach and landing parameters to facilitate comprehensible and actionable insights into flight dynamics. Specifically, we develop two variants of tunnel Gaussian process (**TGP**) models to elucidate aircraft's approach and landing dynamics using advanced surface movement guidance and control system (A-SMGCS) data, which then indicates the stability of fli… ▽ More

Submitted 1 August, 2021; **v1** submitted 18 November, 2020; **originally announced** November 2020.

Comments: Accepted by Journal of Guidance, Control, and Dynamics

9. **arXiv:1802.08561** [**pdf**, **other**] cs.LG stat.AP

Personalized Gaussian Processes for Forecasting of Alzheimer's Disease Assessment Scale-Cognition Sub-Scale (ADAS-Cog13)

Authors: Yuria Utsumi, Ognjen Rudovic, Kelly Peterson, Ricardo Guerrero, Rosalind W. Picard

Abstract: …approach to predict the values of ADAS-Cog13 over the future 6, 12, 18, and 24 months. We compare this approach to a GP model trained only on past data of the target patients (**tGP**), as well as to a new approach that combines pGP with… ▽ More

Submitted 4 May, 2018; **v1** submitted 21 February, 2018; **originally announced** February 2018.

Comments: International Engineering in Medicine and Biology Conference (EMBC) 2018 - accepted. 5 pages. arXiv admin note: text overlap with arXiv:1712.00181

10. **arXiv:1704.00373** [**pdf**, **ps**, **other**] astro-ph.EP astro-ph.SR doi 10.1051/0004-6361/201629882

The GAPS Programme with HARPS-N@TNG XIV. Investigating giant planet migration history via improved eccentricity and mass determination for 231 transiting planets

Authors: A. S. Bonomo, S. Desidera, S. Benatti, F. Borsa, S. Crespi, M. Damasso, A. F. Lanza, A. Sozzetti, G. Lodato, F. Marzari, C. Boccato, R. U. Claudi, R. Cosentino, E. Covino, R. Gratton, A. Maggio, G. Micela, E. Molinari, I. Pagano, G. Piotto, E. Poretti, R. Smareglia, L. Affer, K. Biazzo, A. Bignamini , et al. (12 additional authors not shown)

Abstract: We carried out a Bayesian homogeneous determination of the orbital parameters of 231 transiting giant planets (**TGPs**) that are alone or have distant companions; we employed DE-MCMC methods to analyse radial-velocity (RV) data from the literature and 782 new high-accuracy RVs obtained with the HARPS-N spectrograph for 45 systems over 3 years. Our work yields t… ▽ More

Submitted 28 June, 2017; **v1** submitted 2 April, 2017; **originally announced** April 2017.

Comments: 44 pages (16 pages of main text and figures), 11 figures, 5 longtables, published in Astronomy and Astrophysics, Volume 602, A107 (2017). Tables with new HARPS-N and TRES radial-velocity data (Tables 1 and 2), stellar parameters (Table 7), orbital parameters and RV jitter (Table 8), and planet physical parameters (Table 9) are available as ancillary files (sidebar on the right)

Journal ref: A&A 602, A107 (2017)

11. **arXiv:1701.01218** [**pdf**, **other**] cs.LG cs.CV

Overlapping Cover Local Regression Machines

Authors: Mohamed Elhoseiny, Ahmed Elgammal

Abstract: …prediction error. We propose an efficient ODC framework, which is applicable to various regression models and in particular reduces the complexity of Twin Gaussian Processes (**TGP**) regression from cubic to quadratic. Our notion is also applicable to several kernel methods (e.g., Gaussian Process Regression(GPR) and IWTGP regression, as shown in our experiment… ▽ More

Submitted 5 January, 2017; **originally announced** January 2017.

Comments: Long Article with more experiments and analysis of conference paper "Overlapping Domain Cover for Scalable and Accurate Regression Kernel Machines", presented orally 2015 at the British Machine Vision Conference 2015 (BMVC)

12. **arXiv:1605.07025** [**pdf**, **other**] stat.ML cs.IR cs.LG

Collaborative Filtering with Side Information: a Gaussian Process Perspective

Authors: Hyunjik Kim, Xiaoyu Lu, Seth Flaxman, Yee Whye Teh

Abstract: …model user-item similarities, we formulate the GP in a way that allows the incorporation of low-rank matrix factorisation, arriving at our model, the Tucker Gaussian Process (**TGP**). Consequently, **TGP** generalises classical Bayesian matrix factorisation models, and goes beyond them to give a natural and elegant method for… ▽ More

Submitted 8 June, 2017; **v1** submitted 23 May, 2016; **originally announced** May 2016.

13. **arXiv:1605.03271** [**pdf**, **ps**, **other**] cs.CG

A Fast 2-Approximation Algorithm for Guarding Orthogonal Terrains

Authors: Yangdi Lyu, Alper Üngör

Abstract: Terrain Guarding Problem(**TGP**), which is known to be NP-complete, asks to find a smallest set of guard locations on a terrain T such that every point on T is visible by a guard. Here, we study this problem on 1.5D orthogonal terrains where the edges are bound to be horizontal or vertical. We propose a 2-approximation algorithm that runs in O($n \log m$) t... ▽ More

Submitted 17 May, 2016; **v1** submitted 10 May, 2016; **originally announced** May 2016.

14. **arXiv:1604.07928** [**pdf**, **ps**, **other**] cs.LG cs.AI cs.DC stat.ML

Distributed Flexible Nonlinear Tensor Factorization

Authors: Shandian Zhe, Kai Zhang, Pengyuan Wang, Kuang-chih Lee, Zenglin Xu, Yuan Qi, Zoubin Ghahramani

Abstract: …flexible nonlinear tensor factorization model. Our model can effectively avoid the expensive computations and structural restrictions of the Kronecker-product in existing **TGP** formulations, allowing an arbitrary subset of tensorial entries to be selected to contribute to the training. At the same time, we derive a tractable and tight variational evidence low… ▽ More

Submitted 21 May, 2016; **v1** submitted 27 April, 2016; **originally announced** April 2016.

Comments: Gaussian process, tensor factorization, multidimensional arrays, large scale, spark, map-reduce

ACM Class: I.5.1; I.5.4

15. **arXiv:1509.08285** [**pdf**, **other**] cs.CG

The Continuous 1.5D Terrain Guarding Problem: Discretization, Optimal Solutions, and PTAS

Authors: Stephan Friedrichs, Michael Hemmer, James King, Christiane Schmidt

Abstract: In the NP-hard continuous 1.5D Terrain Guarding Problem (**TGP**) we are given an x-monotone chain of line segments in $\mathbb{R}^2$ (the terrain T) and ask for the minimum number of guards (located anywhere on T) required to guard all of T. We construct guard candidate and witness sets $G, W \subset T$ of polynomial size such that any feasible (optimal… ▽ More

Submitted 17 May, 2016; **v1** submitted 28 September, 2015; **originally announced** September 2015.

Journal ref: JoCG 7(1), 256-284, 2016

16. **arXiv:1409.7480** [**pdf**, **ps**, **other**] cs.LG cs.CV stat.ML

Generalized Twin Gaussian Processes using Sharma-Mittal Divergence

Authors: Mohamed Elhoseiny, Ahmed Elgammal

Abstract: …Bhattacharyya, and Kullback-Leibler (KL) relative entropies. Specifically, we study Sharma-Mittal divergence as a cost function in the context of the Twin Gaussian Processes (**TGP**)~\citep{Bo:2010}, which generalizes over the KL-divergence without computational penalty. We show interesting properties of Sharma-Mittal… ▽ More

Submitted 1 June, 2015; **v1** submitted 26 September, 2014; **originally announced** September 2014.

Comments: This work got accepted for Publication in the Machine Learning Journal 2015. The work is scheduled for presentation at ECML-PKDD 2015 journal track papers

17. **arXiv:1202.5503** [**pdf**, **ps**, **other**] cond-mat.stat-mech cond-mat.dis-nn

Temporal disorder in up-down symmetric systems

Authors: Ricardo Martinez-Garcia, Federico Vazquez, Cristobal Lopez, Miguel A. Muñoz

Abstract: …of placing them under fluctuating global conditions. We observe that variability of the control parameter induces in both classes "Temporal Griffiths Phases" (**TGP**). These recently-uncovered phases are analogous to standard Griffiths Phases appearing in systems with quenched spatial disorder, but where the roles of space and time are exchanged…. ▽ More

Submitted 4 May, 2012; **v1** submitted 24 February, 2012; **originally announced** February 2012.

Journal ref: Physical Review E, 85. 051125, (2012)

18. arXiv:1105.3562 [pdf, ps, other] cond-mat.stat-mech doi 10.1103/PhysRevLett.106.235702

Temporal Griffiths Phases

Authors: Federico Vazquez, Juan Antonio Bonachela, Cristobal Lopez, Miguel Angel Muñoz

Abstract: …there are Temporal Griffiths phases (**TGPs**) characterized by generic power-law spatial scaling and generic divergences of the susceptibility. **TGPs** turn out to be a counterpart of GPs, but with space and time playing reversed roles. **TGPs** constitute a unifying concept, shedding lig… ▽ More

Submitted 18 May, 2011; **originally announced** May 2011.

Comments: 4 pages, 3 figures; Accepted in PRL

19. arXiv:1005.1583 [pdf] cond-mat.soft doi 10.1021/ma802734j

A Novel Method for Studying the Dynamics of Confined Polymers in Nanoparticles in Nanoblends

Authors: Fabrice Cousin, Jérémie Gummel, Daniel Clemens, Isabelle Grillo, François Boué

Abstract: …suspensions of cross-linked PBMA and traces of dPS nanoparticles via water evaporation. The polymer blends were prepared at temperatures well below the glass transition of PS (**TgPS**) and above the Tg of cross-linked PBMA particles (TgPBMA). In these conditions we expect the PBMA particles to deform under capillary pressure to fill the interstices between them… ▽ More

Submitted 10 May, 2010; **originally announced** May 2010.

Journal ref: Macromolecules / J Macromolecules 42 (2010) 2190--2197

20. arXiv:0904.4891 [pdf, ps, other] stat.ME stat.CO

Classification and categorical inputs with treed Gaussian process models

Authors: Tamara Broderick, Robert B. Gramacy

Abstract: Recognizing the successes of treed Gaussian process (**TGP**) models as an interpretable and thrifty model for nonparametric regression, we seek to extend the model to classification. Both treed models and Gaussian processes (GPs) have, separately, enjoyed great success in application to classification problems. An example of the former is Bayesian CART. In the… ▽ More

Submitted 26 September, 2010; **v1** submitted 30 April, 2009; **originally announced** April 2009.

Comments: 24 pages (now single spaced), 8 figures, 2 tables, presented at IFCS 2009 and accepted at JoC